

# Air Force Installation & Mission Support Center



## Air Force PFOS/PFOA Approach – Little Rock AFB Case Study

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# ***Classification***



**The classification of the brief is unclassified.**



# Purpose



***To provide an overview of the Air Force approach to perfluorooctane sulfonate (PFOS)/perfluorooctanoic acid (PFOA) using Little Rock AFB as a case study.***



- **Air Force Civil Engineer Center (AFCEC) Organization**
- **Air Force (AF) Approach to address PFOS/PFOA**
- **Activities around Little Rock Air Force Base (AFB)**
- **Current Situation**



# AFCEC Organization



- Why is someone at Tinker AFB briefing about Little Rock AFB?
  - Tinker Installation Support Section (ISS), working with the bases, oversees cleanup programs at active AFBs in Arkansas and Oklahoma
  - Provides support to base Environmental Compliance/Conservation programs
- ISS does not support the other services
- ISS does not support the National Guard locations
- ISS does not support the Base Realignment and Closure (BRAC) locations





# ***AF Approach - Background***



- **Though widely used in our society, the primary source for PFOS/PFOA for the AF is as a constituent of Aqueous Film Forming Foam (AFFF)**
  - **AFFF is excellent at extinguishing petroleum fires**
  - **Began being used by the AF in 1970 in hangar fire suppression systems, fire training exercises, and emergency responses**
- **In 2009, EPA issued provisional Health Advisories (HAs) for PFOS/PFOA**
- **June 2009 – DoD established policy and assigned responsibilities for the identification, assessment and risk management of Emerging Contaminants (EC)**
  - **PFOS/PFOA are considered ECs because:**
    - **They have reasonable pathways to reach drinking water sources**
    - **They present a potential unacceptable risk to human health**
    - **Regulatory standards are evolving**





# ***AF Approach - Background***



- In 2010, AFCEC began a comprehensive assessment, determining AFFF likely released at:
  - Active, Reserve, Air National Guard, and closed bases
  - Fire training areas, emergency response sites, aircraft crashes, and other potential release areas
- In May 2016, EPA issued the Lifetime HAs for drinking water (DW) of 70 parts per trillion (ppt) for PFOS/PFOA individually or combined
- Though not an enforceable standard, the Lifetime HAs gave AF the authority under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) to move forward to identify, define, and mitigate potential contamination
  - The CERCLA process ensures thorough investigation work
  - It also promotes accountability, community involvement, and long-term protectiveness



- **AF has three step approach to assess potential for PFOS/PFOA contamination of DW**

- **IDENTIFY**

- Determine potential AFFF Releases
- Verify releases through sampling
- Determine if contaminant pathways to DW exist

- **RESPOND**

- PFOS/PFOA > 70 ppt, provide alternate DW supply
- If PFOS/PFOA > 35 ppt but < 70 ppt, establish a monitoring schedule

- **PREVENT**

- Dispose of legacy AFFF – Transition to C6 AFFF
- Retrofit fire vehicles – conduct water-only testing
- New sundown policy for foam fire suppression systems





- **Preliminary Assessment (PA)** – Base-wide record review to identify Fire Training Areas, crash sites and other areas where AFFF may have been released
- **Site Inspection (SI)** – Conduct groundwater, surface water, soil and sediment sampling to verify releases at locations from the PA and identify potential pathways to DW
- If information from the SI indicates potential pathways to DW supplies, the SI is expanded to include sampling any public water systems or private DW wells that may be impacted
- Once off-base work is complete, AFCEC determines if data is adequate to fully determine if pathways are completed or if more work is needed
  - Work continues until pathways are shown completed or no further investigation warranted
- **Remedial Investigation (RI)** is a larger effort to determine nature & extent of contamination
  - AF has reached the RI stage of CERCLA at many locations



# AF Approach



- When AFCEC determines PFOS/PFOA levels exceed the Lifetime HA in DW, the AF takes measures to reduce risk
  - Typically done by providing alternate DW source, such as bottled water, until a permanent solution can be implemented
  - AF long-term solutions, in order of preference:
    - Connect to municipal water supply
    - Install Point of Entry Treatment System (POETS)
    - Install Point of Use Treatment System (POUTS)



# ***Little Rock AFB Activities***



- **PA was performed in 2015**
  - **Identified 22 areas for records review and employee interview for information**
  - **Fourteen locations moved on to the SI phase**
  - **Eight locations identified for No Further Remedial Action Planned (NFRAP)**
- **SI performed at 14 locations in 2018/2019**
  - **Samples collected for groundwater, soil, surface water, & sediment**
  - **SI resulted in 12 new sites that will move on to the Remedial Investigation (RI) phase to determine nature and extent of PFOS/PFOA contamination**
  - **Other 2 locations identified for NFRAP**
- **RI was awarded in Sep 2021**
  - **Contractor currently developing work plans, project management plans, etc.**



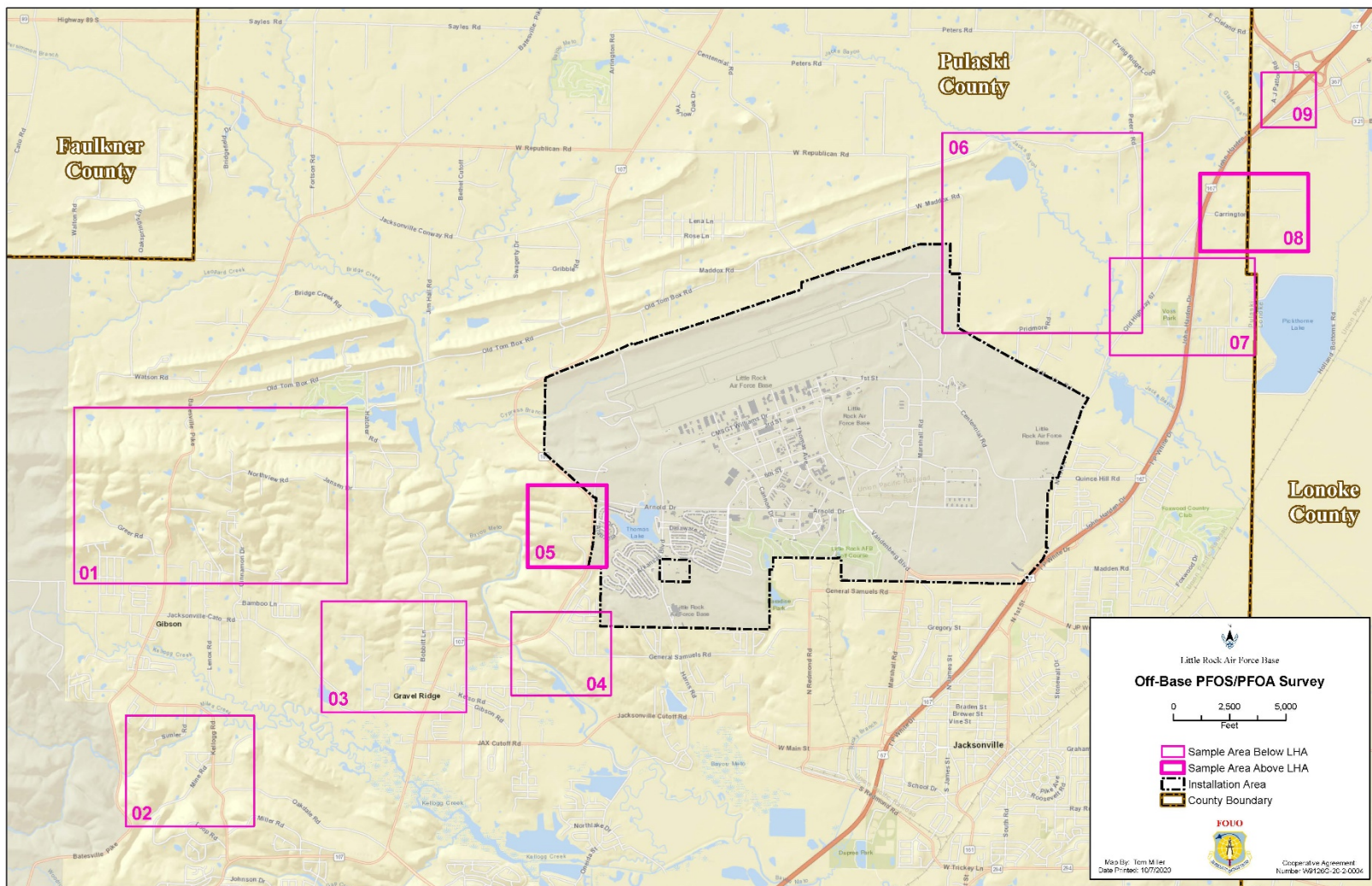
# ***Little Rock AFB Activities***



- **NO IMPACTS** to local municipal water systems
  - Area providers are Jacksonville Water Works (JWW) and Mid-Arkansas Utilities (MAU)
    - JWW – 70% of water from lakes, 30% of water from 10 wells 3 miles SE of base
    - MAU – 100% of water from lakes
    - Base DW comes from JWW
- Influent to base from JWW sampled in 2014 and 2021
  - All samples non-detect in 2014, one sample detected PFOS at 0.31 ppt in Sep 2021
- Jul-Nov 2020: Conducted survey of private DW wells up to 4 miles of base to NE and SW
  - Properties connected to municipal water supply were eliminated from survey
  - Conducted records search for known DW wells
  - If property had known DW well, or unsure if on municipal water, owners were contacted up to 3 times
  - 100+ properties surveyed, collected samples from 58 private DW wells



# Little Rock AFB Activities







# Current Situation



- **Four locations tested above the Lifetime HA**
  - **One in Section 5**
  - **Three in Section 8**
- **Bottled water was provided to each location as soon as preliminary, non-validated sampling results indicated an exceedance**
- **Connection to municipal water supply was cost prohibitive at all locations**
  - **Required municipal connections were one-half to one mile away from locations**
- **Section 5 location has had POETS installed and is up and operational**
- **Section 8 locations:**
  - **One locations POETS installed and operational**
  - **One locations POETS installed but well is dry and will not produce – bottled water still being provided**
  - **One location is uninhabited—AF will install POETS when owner establishes residence**



# Questions?





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